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Subcontractors	Program Requirements Document	For Additional Info: http://EDMS	Effective Date: 06/02/03
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Manual: Subcontractor Requirements

Change Number: 99721

1. PURPOSE

This document establishes requirements for the maintenance and safe use of hand and portable power tools. This document highlights requirement referenced in the Source Documents section, as well as BBWI requirements. Any applicable regulatory or BBWI requirements must be followed, with the most stringent requirement being met.

2. APPLICABILITY

This document applies to all subcontractors working at the INEEL who use hand tools and portable power tools, as specified in their contract with BBWI. Stricter requirements may be imposed by subcontractors upon their employees or subtier contractors. The requirements of this document must be followed by subcontractors; however, the means of implementation may vary as determined by the subcontractor.

3. REQUIREMENTS

3.1 Training

- 3.1.1 All workers who use portable power tools shall be trained on the proper use of all tools they are likely to use. This training shall include the following:
 - A. initial tool safety training (before using the tool) covering procedures and possible hazards
 - B. retraining as needed to maintain safety awareness and operational proficiency
- 3.1.2 Workers who operate powder-actuated tools shall be trained on the proper use of the specific tools being used. This training shall meet the following requirements:
 - 3.1.2.1 Initial training shall be completed before the worker operates powder-actuated tools.
 - 3.1.2.2 Workers shall be retrained as required by the equipment manufacturer.
 - 3.1.2.3 A record of the training shall be retained by the subcontractor.

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3.1.2.4 A card signed by the trainer shall be provided to the operator and shall be in the operator's possession whenever a powder-actuated tool is used.

3.1.3 Employees in charge of issuing tools shall be trained to recognize visible defects in all tools in their custody.

3.2 Tool Use and Maintenance

3.2.1 Tools shall be maintained and operated in a safe condition.

3.2.2 Only the appropriate tool shall be used for a particular task.

3.2.3 Tools shall be examined for damage before each use.

3.2.4 Workers shall use personal protective equipment, which is appropriate, for the hazards associated with the use of the tool.

3.2.5 Work with a tool shall be stopped if there is a question regarding its safe use, and resolution shall be obtained from a qualified person.

3.2.6 Tools shall be used only as intended by the manufacturer and in accordance with the manufacturer's instructions.

3.2.7 All defective tools shall be taken out of service and not used until repaired.

3.2.8 Unrepairable and defective tools shall be disposed of.

3.2.9 The following tool safety practices shall be followed:

3.2.9.1 Cutting edges shall be protected when the tool is stored or transported.

3.2.9.2 Work shall be secured with clamps or a vise, when practical, so that the worker has both hands free to operate the tool.

3.2.9.3 When flammable substances or ignition sources are present, spark-resistant tools shall be used.

3.2.9.4 Power tools shall be disconnected from the power source when serviced and when accessories such as blades, bits, and cutters are changed.

3.2.10 Power cords and pneumatic hoses shall be kept away from heat, oil, and sharp edges unless specifically approved for such use.

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3.2.11 Electrical cords/air hoses shall not be used to carry or hoist tools.

3.2.12 Tools shall be maintained in accordance with the following requirements:

3.2.12.1 Cutting edges shall be kept clean, sharp, and properly ground.

3.2.12.2 Metal striking surfaces shall be kept clean, well dressed, and properly tempered.

3.2.12.3 Flats or teeth of wrenches and other tools designed for turning shall be kept in the designed condition and at the proper angle.

3.2.12.4 Impact tools, such as drift pins, wedges, and chisels, shall be kept free of mushroomed heads.

3.2.12.5 Surfaces of wooden handles shall be kept clean, free of splinters or cracks, and smooth, but with sufficient friction to be easily grasped.

3.2.12.6 All hydraulic jacks shall be examined for defects (particular attention should be paid to repairs and replacement parts), and shall be properly lubricated at regular intervals.

3.2.12.7 Hydraulic jacks that are exposed to freezing temperatures shall be supplied with adequate antifreeze liquid.

3.2.13 Portable power tools shall meet the standards listed in Table 1.

Table 1. Standards for portable power tools.

Tool Type or Condition	Standard
All	equipped with type of power control switch supplied by manufacturer
operated by electric power	<ul style="list-style-type: none"> approved by Underwriters Laboratories, Inc. (UL) or by an equivalent, recognized testing agency
used outdoors, at construction sites, or in wet or damp areas saber, scroll, and jig saws with nonstandard blade holders	<ul style="list-style-type: none"> grounded via the case, double insulated, or cordless double-insulated or protected by GFCIs rated to trip at 5 (± 1) milliamp may have blades with shanks that are nonuniform in width, provided that the narrowest portion of the blade shank is an integral part in mounting the blade

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Table 1. Standards for portable power tools.

Tool Type or Condition	Standard
Pneumatic tools	tools secured to the hose or whip by a positive means that prevents the tool from becoming accidentally disconnected
impact (percussion) tools	safety clips or retainers securely installed and maintained to prevent attachments from being accidentally expelled
hoses exceeding 2-inch inside diameter	equipped with a safety device at the supply source or branch line to reduce pressure in the event of hose failure
Abrasive blast cleaning nozzles	equipped with (1) an operating valve that must be held open manually and (2) a support mounting the nozzle when not in use
nailers, staplers, and other fastening tools	equipped with a safety device on the muzzle to prevent fastener ejection until the muzzle is pressed firmly against the work surface
powder-actuated tools	certified by the manufacturer as meeting American National Standards Institute (ANSI) standard A10.3-1985 requirements
Electrically operated hand tools that use 125 volts	must have a GFCI when used with temporary system. See NEC 305-6(a). All 125-volt receptacles shall be GFCI protected.

3.2.14 Portable power tools and any other ignition source causing tools are prohibited from being used in an explosive or flammable atmosphere.

3.3 Electric Tools

3.3.1 All portable (hand-held) power tools, extension cords, and ground fault circuit interrupters (GFCIs) shall be visually inspected prior to use. GFCI's shall be tested in accordance with OSHA guidelines by pushing the test button. If the device trips and resets the GFCI is working properly.

3.3.1.1 Electric tools and equipment that are cord and plug connected shall be inspected as follows.

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Condition	Criteria
Damage	Flexible cords and cables shall not have worn, frayed, or damaged areas which present an electrical hazard to employees. There shall be no breaks, damage, or cracks exposing live parts.
Strain relief	Strain relief shall be maintained to prevent pull from being directly transmitted to joints or terminals.
Terminations	Terminations shall have no stray strands or loose terminals.
Missing blades, etc.	There shall be no missing or bent blades, pins, or contacts.
Missing cover plates	There shall be no missing cover plates.
Marking	Marking, identification, or instructions for special configurations shall be securely attached and in legible condition.

3.3.1.2 Tools issued from a tool crib shall be inspected by the attendant prior to issue. Tools and equipment that are damaged shall not be issued.

3.3.1.3 Tools that show evidence of damage or that have been repaired shall be re-tested prior to releasing them for use. A record of the tests performed shall be documented and retained.

3.3.2 Before operating tools, employees shall inspect them for damage; any tool that is damaged or defective shall be tagged "out of service" or returned to the tool crib attendant.

3.4 Tool Guarding

3.4.1 All hand and portable power tools shall be guarded properly.

3.4.2 Chain saws shall have tip guards and chain brakes to minimize exposure to the moving saw chain during kickback.

3.4.3 Chain saw blade guards may be removed only if the use of the guard would create one or both of the following conditions:

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- A. prevent an employee from performing the particular work assignment
- B. offer a more serious hazard than that associated with an unguarded chain saw blade.

3.4.4 All power lawn mowers shall be certified by the manufacturer as meeting the design specifications of ANSI B71.1-X1968.

3.5 Pneumatic and Hydraulic Tools

- 3.5.1 The manufacturers safe operating pressures for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
- 3.5.2 When using compressed air is used for cleaning, the following requirements shall apply:
 - A. Pressure shall be reduced to less than 30 psi.
 - B. Effective chip guarding and PPE shall be used.
 - C. Compressed air shall not be used to clean employee clothing.
 - D. Employees within the immediate area shall be warned and notified.
- 3.5.3 Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.
- 3.5.4 Safety clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.
- 3.5.5 All pneumatically driven nailers, staplers, and other similar equipment provided with automatic fastener feed, which operate at more than 100 p.s.i. pressure at the tool shall have a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.
- 3.5.6 The use of hoses for hoisting or lowering tools shall not be allowed.
- 3.5.7 All hoses exceeding ½ inch inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
- 3.5.8 Quick make-up air connections exceeding ½ inch ID shall be secured by a “whip check” or other approved method at each connection.

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- 3.5.9 Abrasive blast cleaning nozzles shall be equipped with an operating valve that must be held open manually.

3.6 Fuel-Powered Tools

- 3.6.1 Fuel-powered tools that have been in use shall be shut off and allowed to cool before being refueled, serviced, or stored.
- 3.6.2 If fuel-powered tools are used in buildings or enclosed spaces, toxic gas concentrations and personal protective equipment shall comply with PRD-2110, Confined Spaces; and PRD-2109, Respiratory Protection, as applicable.

3.7 Powder-Actuated Tools

- 3.7.1 A Safe Work Permit (SWP), JSA or other hazard evaluation shall be used to authorize the use of a powder-actuated tool.
- 3.7.2 Only fasteners and explosive loads that have been specifically manufactured for use in powder-actuated tools shall be used in such tools.

3.8 Hand-Held Grinding Tools

- 3.8.1 Grinders shall be supplied with sufficient power to maintain the spindle speed at safe levels under normal operating conditions.
- 3.8.2 Grinding tools shall be inspected and maintained as follows:
- 3.8.2.1 The spindle speed of the machine shall be checked before the wheel is mounted to make sure that it does not exceed the maximum operating speed marked on the wheel.
 - 3.8.2.2 Immediately before mounting, wheels shall be checked to make sure they have not been damaged.
 - A. The wheel shall be closely inspected.
 - B. A ring test shall be performed by placing one finger through the middle hole and tapping gently with a nonmetallic object such as the wooden handle of a screwdriver (a clear metallic tone indicates the wheel is undamaged; a "dead" sound indicates the wheel is cracked).
 - 3.8.2.3 Cracked wheels shall be replaced as soon as a crack is discovered.

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3.8.2.4 Grinding wheels shall not be forced onto the spindle, but shall sit freely.

3.8.2.5 Spindle nuts shall be tightened only enough to hold the wheel in place.

3.8.2.6 All contact surfaces of wheels, blotters, and flanges shall be flat and free of foreign matter.

3.9 Jacks

3.9.1 Jacks shall be inspected before use to make sure that the manufacturer's rated capacity is legibly marked and the jacks have a positive stop to prevent over-travel.

3.9.2 The following precautions shall be taken when using jacks.

3.9.2.1 The manufacturer's rated capacity shall not be exceeded.

3.9.2.2 In the absence of a firm foundation, the base of the jack shall be blocked or cribbed.

3.9.2.3 A block shall be placed between the cap and the load if there is a possibility of the cap slipping.

3.9.2.4 During operation, the stop indicator shall be kept clean and the indicator shall be observed to determine the limit of travel; the indicated limit shall not be overrun.

3.9.2.5 After a load is raised, it shall be immediately cribbed, blocked, or otherwise secured.

3.9.3 Hydraulic jacks shall be maintained and inspected as follows:

- A. once every 6 months when in constant or intermittent use at one locality, or before use when used rarely
- B. when sent out of the shop for special work and when returned
- C. immediately before and after being subjected to abnormal load or shock

3.10 Jackhammers

3.10.1 Jackhammer operators shall wear the appropriate personal protective equipment for protection from potential hazards.

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4. DEFINITIONS

See the Glossary (LST-27) for definitions of the following terms:

BBWI Point of Contact

Competent Person

5. REFERENCES

5.1 Source Documents

29 CFR 1910, Subpart P, Hand and Portable Powered Tools and Other Hand-held Equipment

29 CFR 1926, Subpart I, Tools B Hand and Power

NFPA 70E, Electrical Safety Requirements for Employee Workplaces

5.2 Related Requirements

The following documents may also contain requirements that apply to this activity:

PRD-2001, Personal Protective Equipment

PRD-2011, Electrical Safety

PRD-2109, Respiratory Protection

PRD-2110, Confined Spaces

6. APPENDICES

None